



# Repairing Kenmore Elite HE3 Washer Control Board Relays

Cleaning the contacts on the control board relays can fix the FDL and F11 errors. Most of the time the relay just becomes unattached or loose from the control board.....just resolder the relay on the bottom of the control board.

Written By: jadeters



## INTRODUCTION

The Kenmore Elite HE3 washers will stop their cycle and display an error code if they detect a problem. Two error codes seem prevalent, FDL and F11. FDL indicates a failure of the door lock mechanism. F11 indicates an error in communication with the control board and the front panel. Clearing the error and restarting the cycle may fix the problem temporarily, but is not a permanent fix.

One condition known to cause the problem is that the door latch relay on the control board can become coated with carbon due to excessive arcing. This guide will explain how to access and clean or replace the relays.

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### TOOLS:

- [9/32" Socket Wrench](#) (1)
  - [Desoldering Braid](#) (1)
  - [Flathead Screwdriver](#) (1)
  - [Solder](#) (1)
  - [Soldering Station](#) (1)
  - [T20 Torx Screwdriver](#) (1)
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## Step 1 — Open the locked door manually

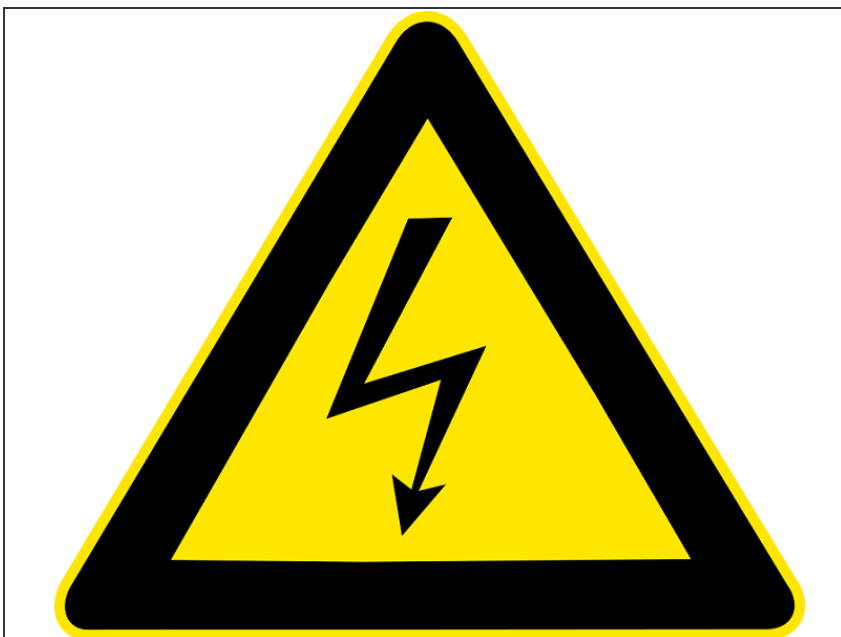



- The F-DL door lock error may indicate an inability to open the door, trapping your damp clothes inside. This first step is optional, and explains how to release the door lock manually.


 Unplug the washing machine!


- Using a Torx T20 screwdriver or a 9/32" socket wrench or driver, remove the three screws along the bottom front of the washer, and remove the panel.
- Reach up inside the right hand side behind the door latch, and you should be able to feel a 1" diameter ring. Grab the ring with your fingers, and pull it down toward the floor. It will release the door lock.

## Step 2 — Safety first!



 **DANGER!** Improper handling of live electrical circuits can cause electrocution, fire, and/or death! Do not attempt to duplicate these repairs yourself unless you understand how to safely perform electronic repairs in general. If you do, be sure you take proper safety precautions.


 Wear safety glasses when soldering. You could spatter molten solder or rosin in your eye and go blind. Unplug the washer before opening the cabinet. You could electrocute yourself. Wash your hands thoroughly after handling lead solder (especially if you are a smoker.)

 **WARNING!** If you try this and do it wrong you could wreck your circuit board. You could wreck your washer. Your washer could unexpectedly start running water and flood your house (that actually happened to a friend of mine who also owned this washer.) You could burn yourself. You could burn your house down.

- I am not kidding about any of these safety precautions or risks. And I can not be held responsible for actions you take on your own. You assume full responsibility for any consequences of following this guide. Call a qualified repair person if you are uncomfortable with any of these steps.

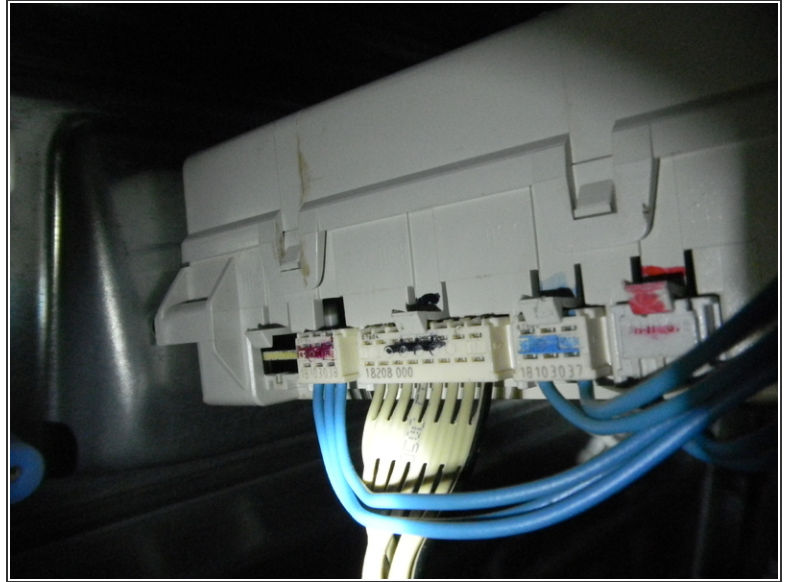
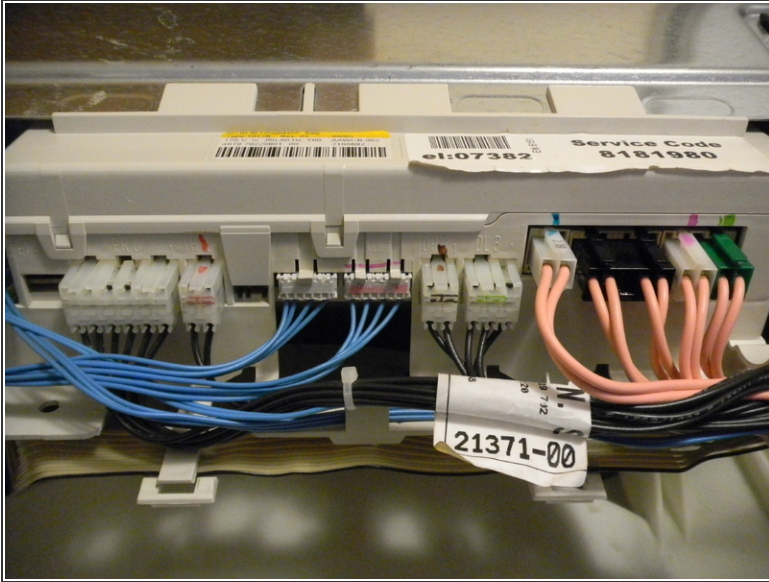
### Step 3 — Remove the top panel



 Unplug the main power cord.

- To remove the lid, remove the three screws along the back that hold it in place using either a T20 Torx screwdriver or a 9/32" socket driver.
- Slide the top panel toward the back of the machine about one half of an inch, and lift the top panel up and off.

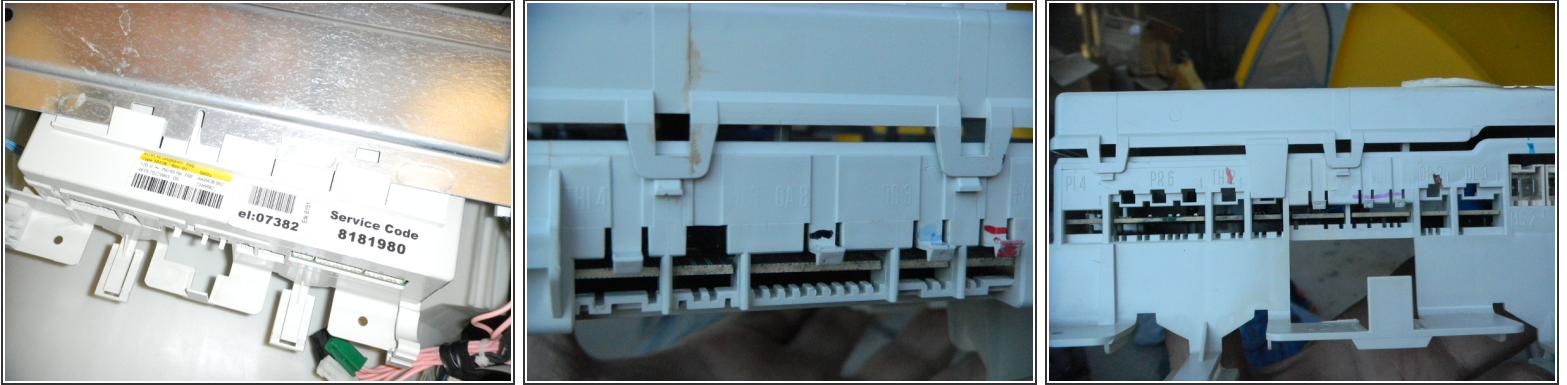
## Step 4 — Mark the wires



- Mark the wires and note how the cables are routed, so you can return them to their original routes after disassembly.
- Either apply wire labels, or take a fine-tipped permanent marker and as you disconnect each connector mark it with the two letter name of the mating socket, which you will find stamped on the plastic of the control unit's housing. A flashlight will help reading the letters along the left side of the control unit.

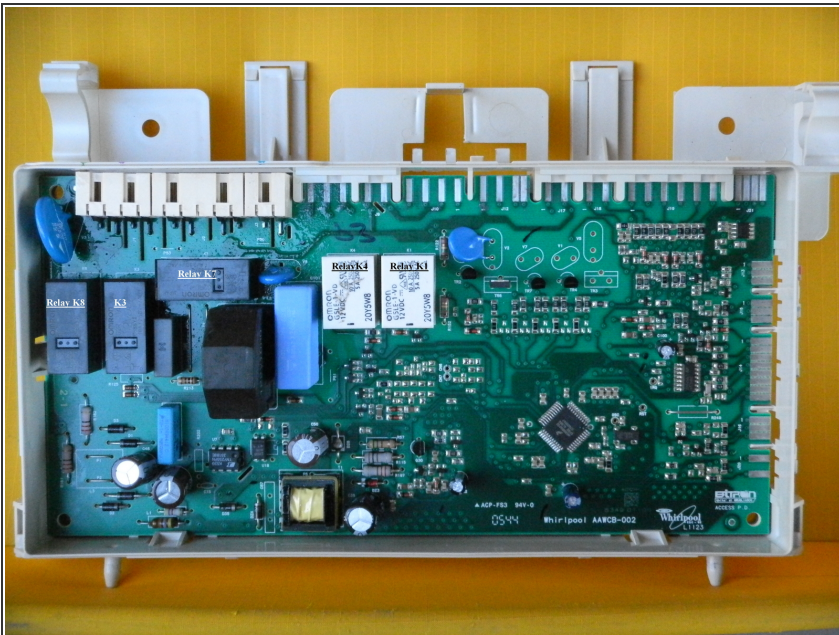


## Step 5 — Access the main controller board



- Remove the control unit by very gently prying up the two outside tabs that hold it to the top crossbar with a flat bladed screwdriver and simultaneously sliding the control unit toward the front of the washer.
- ❗ Only the outer two tabs have a locking notch holding the control unit to the crossbar. The middle tab is there just for support.
- Open the gray housing of the control unit by gently prying the side tabs open.
- Remove the circuit board the same way, by gently prying open the tabs holding it down.

## Step 6 — Circuit board repair and replacement



- There are three or five relays on the circuit board. K6 is an OMRON G2RL-1A-E, 12VDC, and rated to switch 16A at 250 VAC. K1 and K4 are both OMRON G5LE-1-VD, 12 VDC, and rated to switch 10A at 250 VAC.

- K1 controls the door lock solenoid. I found the contacts on it were blackened due to arcing. I didn't bother to find out what the other two relays do, but I cleaned them all anyway. Another repairer says that only K1 & K4 were inspected; K1 had significant contamination & K4 looked new by comparison. Treated K1 only with all problems resolved!
  - Unsolder one relay at a time from the circuit board, clean or replace it, then solder it back in position.
  - To unsolder a relay, start by heating the solder at one end of the relay, and gently pull the relay's plastic package with a finger on the hand holding the circuit board. Use solder wick to remove excess solder. After making progress at one end, switch to desoldering the contacts at the other end of the relay in the same fashion.
  - To clean a relay, open its plastic case. Blow out the dust and grit. Dress the relay contacts with a small piece of folded-in-half 200-400 grit sandpaper, treated with contact cleaner. Replace the plastic case on the relay.
  - Solder the relay back onto the circuit board, and repeat with the next relay until all relays are cleaned and/or replaced.
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To reassemble your device, follow these instructions in reverse order.



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